

U.S. APPLICATION
PRELIMINARY AMENDMENT

Attorney Docket No.: 3654.006

IN THE CLAIMS

Please cancel claims 1-12.

13. (new) A metal forming device including an anti-friction bearing structure adapted to accommodate high press velocities and substantial side thrust forces, wherein said anti-friction bearing structure comprises:

a bearing substrate, and

an anti-friction layer formed by sintering onto said bearing substrate a sintering composition comprised of at least 2 wt% of particles of a hardfacing composition, the balance comprising bronze powder, a lead alloy powder, a tin powder or a tin alloy powder.

14. (new) A metal forming device including an anti-friction bearing structure adapted to accommodate rotational or linear contact motion, wherein said anti-friction bearing structure comprises:

a bearing substrate, and

an anti-friction layer formed by sintering onto said bearing substrate a sintering composition comprised of at least 2 wt% of particles of a hardfacing composition, the balance comprising bronze powder, a lead alloy powder, a tin powder or a tin alloy powder.

15. (new) A metal forming device as in claim 14, wherein said sintering composition comprises 2 - 20 wt.% of the hardfacing composition.

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16. (new) A metal forming device as in claim 14, wherein said sintering composition comprises 5 - 20 wt.% of the hardfacing composition.

17. (new) A metal forming device as in claim 14, wherein said sintering composition comprises 2 - 15 wt.% of the hardfacing composition.

18. (new) A metal forming device as in claim 14, wherein said sintering composition comprises 5 - 15 wt.% of the hardfacing composition.

19. (new) A metal forming device as in claim 14, wherein said device is a heavy duty press or die set.

20. (new) A metal forming device as in claim 14, wherein said bearing structure is adapted to accommodate rotational contact motion under high press velocity and substantial side thrust forces.

21. (new) A metal forming device as in claim 14, wherein said bearing structure is a bushing, a wear plate, or a wear ring.

22. (new) A metal forming device as in claim 14, wherein said particles of hardfacing composition have a number average particle size of from 5 to 200 μm .

23. (new) A metal forming device as in claim 14, wherein said

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particles of hardfacing composition have a particle size of from 10 to 60 μm with a mean of 25-30 μm .

24. (new) A metal forming device as in claim 14, wherein said particles of hardfacing composition have globular shapes.

25. (new) A metal forming device as in claim 14, wherein said hardfacing composition is an intermetallic hardfacing alloy comprising 50 wt.% cobalt and 25 wt% molybdenum.

26. (new) A metal forming device as in claim 14, wherein said hardfacing composition is comprised of:

Chromium	8.5 wt.%
Carbon	up to a maximum of 0.08 wt.%
Silicon	2.6 wt.%
Molybdenum	28.5 wt.%
Nickel and Iron	jointly up to a maximum of 3 wt.% with the balance being Cobalt.

27. (new) A metal forming device as in claim 14, wherein said hardfacing composition is comprised of:

Cobalt	51.0-53.0 wt.%
Cromium	16.5-17.5 wt.%
Silicon	3.0-3.5 wt.%
Nickel and Iron	3.0 wt.% Max
Molybdenum	27-29 wt.%
Sulfur	.03 wt.% Max
Phosphorus	.03 wt.% Max, and
Carbon	.1 wt.% Max.

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28. (new) A metal forming device as in claim 14, wherein said balance of said sintering composition is comprised of bronze powder.

29. (new) A die set, including a bushing for accommodating heavy duty linear or rotary contact motion, said bushing comprising:

 a monolithic steel body having a machined internal cylindrical surface; and

 a porous bearing layer on said internal cylindrical surface;
 said bearing layer formed by compacting and then sintered *in situ* on said internal cylindrical surface a sintering composition comprised of from 5 wt% to the percolation limit of particles of a hardfacing composition, the balance comprising bronze, followed by machining, said bearing layer having a thickness of no greater than approximately 0.31 cm.

30. (new) The composite bushing of claim 29, wherein said bronze powder comprises approximately 90% by weight copper and approximately 10% by weight tin.